

AMERICAN BEE JOURNAL

ESTABLISHED IN 1861 OLDEST BEE PAPER IN AMERICA

DEVOTED EXCLUSIVELY TO THE INTERESTS OF HONEY-PRODUCERS

40th YEAR.

CHICAGO, ILL., MARCH 1, 1900.

No. 9.

CONTRIBUTED ARTICLES

Description of the Johansen Extension Hive.

BY H. JOHANSEN.

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If I had experimented with one colony I might not have been fully convinced of the correctness of my theories as represented in the hive, but having found the trial made on a large scale to have been eminently successful and convincing, I have seen my way clear to relegate the old furniture for the new; and I am convinced that however radical the ideas may seem, or how much opposed to commonly accepted practices, they are correct, and entirely follow along the lines of the natural habits and inclinations of the bee. That, of course, is the plan of procedure in successful apiculture. There is but small wisdom, for instance, in attempting to make the creature of instinct rise with its stores when entering the hive, if its instinct directs to do otherwise, however much it may be said that the bees deposit their stores all around the brood-comb, and accepting that as true. Now, I believe there is a good deal of such work attempted, and it cannot help being detrimental to a large extent to anything like success. I do not believe that present appurtenances are any more perfect than present methods of handling. Since the time of the great Langstroth there have been some improvements in hives, it is true, yet the main features remain the same.

It seems barely possible none of the predecessors thought of all the requirements, and it is even possible that errors have been made which altho perhaps slight, or mere perversions, are still detrimental to a degree.

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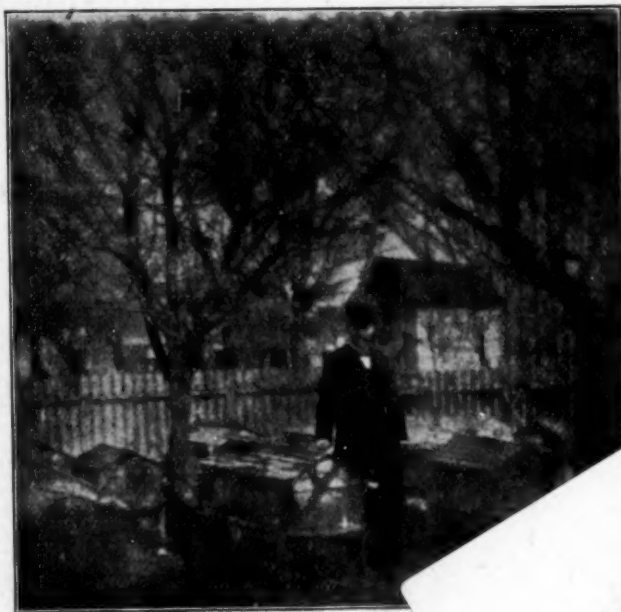
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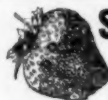
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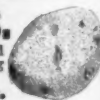
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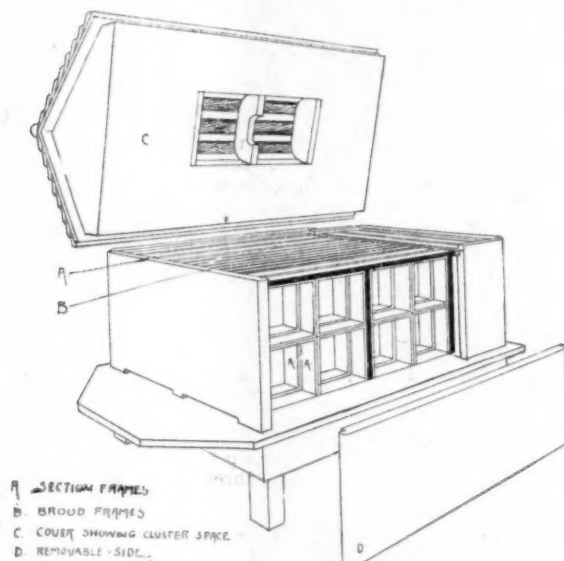
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Mr. Johansen and His Extension Hive.

to the sides and back, and between them and the honey section-frames, are hung division-boards, either in the form of a frame with glass, or a light wire screen; in either case intended to make it possible to see the sections, and being equally serviceable and desirable.

If a very large colony is produced either by a very fine queen or by uniting swarms, as I mention later, one sec-



tion-frame on each side of the brood-frames can be removed; or both, thus making brood-chamber of the entire front of the hive; or the section-frames can be removed from the sides and back, giving still more room for brood-chamber. In the first case we have eight brood-frames and six section-frames; in the second case we have 12 brood-frames and four section-frames; in the third case we have 16 brood-frames, and two section-frames in the back of the hive; in the fourth case we have 20 brood-frames, and a colony with such a brood-chamber being naturally very strong, there will be no trouble in getting the bees to rise into a super constructed of section-frames, similar to those already mentioned, except that they may contain four or eight sections, according to the demand. Such a super would contain 50 or 100 sections. Both side and back walls are removable for convenience in taking off the surplus (whether in sections or in honey-frames for extracting).

After the removal of the section-frames or honey-frames at the close of the season, the space so left in the back and sides is filled with straw. The front of the hive is of two pieces, with tar or oiled paper between to keep the heat in. The hive usually facing the south, it is not necessary to take quite the precaution in chaffing that side, and I am confident the double wall will be sufficiently warm for the front. The floor of the hive is well chaffed, as is also the roof or cover, which is besides fitted with a cluster space and means of ventilation thru the chaffing.

It is not designed to run a super except when more than one queen is run, or when the hive proves too small for the accommodation of the brood and surplus of a colony with a very strong queen. When running several queens they will be excluded from each other and the surplus by queen-excluders, but all the bees being from the same colony will intermingle. The front of the hive will have two entrances to be used as explained later.

The advocates of the 8-frame hive could run this hive without changing their theories in regard to the brood-chamber; and those who advocate large brood-chambers would be equally well suited, as the hive has elastic qualities in which an expert will delight.

I start the hive with eight frames of brood and two section-frames on each side, and two at the back, for instance. I then find that my queen can fill more commodious quarters, and take out two section-frames, which still leaves four section-frames containing 32 sections, and increases the brood-chamber to 12 frames. If I begin expanding the brood-chamber before hanging the section-frames, I of course simply move out the division-board as the requirements direct, and this I can do to 20 frames in the brood, in which case the strength of the colony, with perhaps two or even three queens, will easily send the bees up to the super

as before mentioned, for it will, of course, then be necessary to have a super.

Normally, we will consider that the hive has six of the section-frames holding 48 sections, on the sides and back, and that this is the only reasonable and economical way of running a moderately strong colony, or even a strong colony under the usual conditions.

It is well known that the lower part of the hive has to be filled before the rise to the super takes place; but how often the bees loaf around and sometimes miss a crop, even when there is no apparent reason, the common cry alone can tell. We occasionally read in the bee-papers of some one's plan of forcing the bees into the sections. Now it is simply impossible to force bees to do anything, and one can reverse the order of things as much as one likes, and in the end the result will be the same. Towards fall, for instance, when there are a large number of empty cells in the brood-combs, the bees will carry honey down from the super, if there is no honey-flow, etc.

I have concluded that the bees apparently do not rise into the super with stores as readily as they will deposit their stores in the lower part of the hive; at least not until there is a superabundance of bees in the hive. Herein lies the difference, and I believe also from observation, that bees prefer to spread to the sides rather than spread upward. From the experiment I find that the bees will build to the sides indefinitely, and enter the sections without any hesitancy or delay whatever, never failing in this respect if there is honey flowing. Now, this is a valuable consideration, and in connection with the clean sections, and straight, full combs obtainable with the system, would be worth any inconvenience, if indeed there were any. As the bees enter the sections from the side, and only the edges are exposed, there is no possible chance for any gluing or dirtying of the sections, and one can remove section after section with scarcely a speck of bee-glue to be seen, and it is consequently not necessary to scrape them either by hand or machinery.

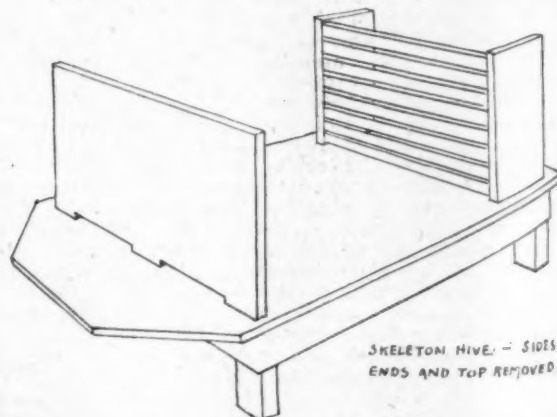
Another reason which makes this honey section-frame desirable is its easy removal. To be considered quite distinctly are the following:

1st. That when one desires to know how the sections are filling it can be discovered in a moment, and without disturbing the bees, by simply removing the side or back, thus exposing the sections from the side, which in itself is much superior to peering down between the cracks thru a colony of bees rising towards one's face.

2nd. When removing the sections one does not straightway invite every bee which feels it has had its roof-tree and stores stolen, to rise to a friendly caress; to say nothing of the disturbing nature of the proceeding, which is undoubtedly felt in the work of the entire colony.

3rd. Full section-frames removed are at once replaced with new section-frames ready at hand; and the vexation of removing a super with sections in all stages of completeness and incompleteness is minimized, as it is of course only possible to remove about eight sections at a time, and, as they are pretty well localized in the same part of the hive, are apt to be in about the same condition.

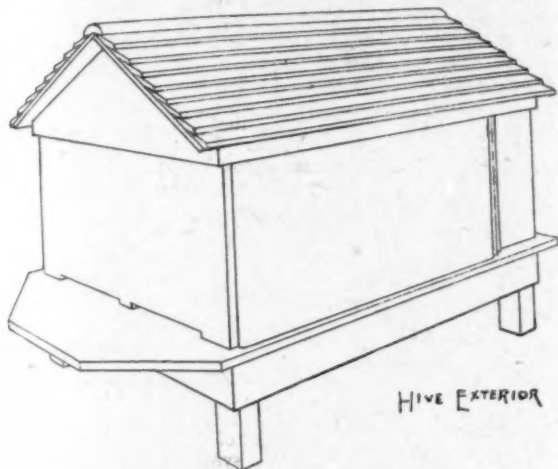
It might be added that the storing of honey is not en-



tirely interrupted when removing sections during a honey-flow, as working on one side only there are still two sides in which the storing goes on uninterruptedly.

One of the main features of the hive is what I will call its elasticity. An 8-frame hive is the thing to have if the rearing facilities are only sufficient to produce brood enough

to cover that number of frames, but if more bees than eight frames will accommodate be produced it will be necessary to induce swarming thereby, or accommodate them in the brood-chamber, and no one will have any objection to a large colony, no matter how large, because the more bees it has the more honey can be produced—providing it does not become crowded so as to induce swarming. It will not do



to be arbitrary in the selection of either a large or a small hive, for all colonies do not work alike, and what would suit one colony exactly might not suit another, like a large shoe on a small foot. What is necessary, then, is a hive to meet every exigency, and to accommodate a large or small colony equally well. Personally, I believe in having plenty of bees in the hive, and by that I mean all I can get, either by means of good queens or by a plan which I intend hereafter to pursue for this reason, and incidentally to solve the swarming question, or rather, control swarming in the interest of honey-production. Both of these highly desirable things I can accomplish with the new hive in the following manner: I start with eight brood-frames. If I find a necessity for 10 I expand the brood-chamber and this I can do indefinitely in the manner and as previously described.

A still more sure plan is that at which I have already hinted, viz.: two or more queens to a hive. This, as I have before said, was an afterthought too late to put into practice during the last season, and while I have not tried it, yet unquestionable authority not differing in essentials, confirms my belief in it. Running more than one queen in a hive is not an entirely new proposition, and such a plan, if practicable, would have, to any one, its own obvious reasons unnecessary to dwell upon.

I quote as authority Mr. G. M. Doolittle, and while my references are found in his book on "Scientific Queen-Rearing," the circumstances alluded to by Mr. Doolittle are not different in an ordinary working hive. Any one can convince himself of the possibility by reading from the middle of page 93 to page 96 carefully. One or two other references, perhaps not so applicable, can also be found. It may be noticed that mention is made by Mr. Doolittle of these things having occurred in an upper and lower hive, while I use only a lower hive. This, however, can in no way affect the proposition. A double-queen system in a working hive would hardly be possible, except in one having the features which I describe, and outside of this possibility its advantages are so numerous as to render it very valuable. The following, then, would be the method of procedure:

If the bees show a tendency to cast a swarm I am perfectly willing to let them do so; rather gaining than losing thereby, as by the management I will still have the united force of all the bees I had before, and in addition an increased producing facility as hereinafter explained.

As soon as a swarm is cast, having first placed the new swarm in the hive from which it issued, I expand the brood-chamber. I do this, if I have already hung the surplus frames, by sacrificing one on each side, or all, as the case may seem to require. Before returning the new swarm to the old hive, I push the old swarm and brood-frames to one side of the hive, and isolate the queen by means of an excluder, leaving half of the brood-chamber to the domain of each queen. Having given the new swarm the necessary brood-frames with starters, I close the hive, and the operation is practically complete. In order to be sure that the

young queen shall return to the right side of the hive when she returns from her flight, if she should not happen to have been fertilized before the swarm was cast, I have two entrances in the front of the hive which I use as follows:

Having prepared one side as I explained, I close the entrance which opens into the space for the new swarm, leaving the entrance which opens into the space for the mother colony for a passageway for all the bees; if the new queen has not been fertilized, it will of course leave and enter by this entrance. This insures separation of the queens.

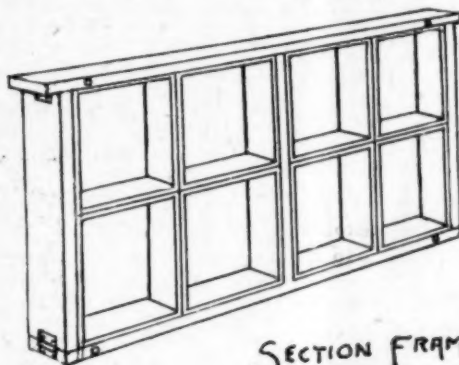
After a few days, when I am sure the new queen has been fertilized, I remove the obstruction from the closed entrance and run them as necessary. If still another swarm is cast, I handle it in very much the same manner by placing the new swarm in the rear compartment and giving it four brood-frames. The queen-excluder already in place serves to exclude the queen from the rest of the hive.

Having hived the swarm I examine both sides of the original brood-chamber to ascertain, if I have not seen the swarm issue, which side cast it. This is necessary in order to arrange the entrance on account of the possibility of an unfertilized queen, as before explained. Having cleaned out the remaining queen-cells, if any, while investigating the two sides, I can close down the cover on a single hive with the rearing power of two or three colonies, and feel quite secure about further swarming or dwindling on account of it.

If the second swarm issues after about June 1st, it is of course a question for the bee-keeper to decide whether he will install it as colony number three of the hive, reinstate the bees, or handle the swarm in some other manner, but the facility is ready for the emergency if required. No moving around or handling of the hive is necessary. Such a thing would at least be very singular and rare, so the objection which might occur to some is not of weight. The size of the hive is about 22x26 inches.

In the fall, in preparing for chaffing, the hive is reduced to one colony (if more than one queen is successfully used) occupying about eight frames; leaving chaffing spaces of three to five inches on the sides and back; or preferably two colonies are left, the brood-chamber being reduced to about 10 frames, which is sufficient, considering considerable room in the cluster-space; there will then be about a five-inch chaffing space in the back and about 3½ inches on each side. The side spaces can be advantageously used for feeding, either in the fall before chaffing, or in the spring by removing the chaff from the warm side and placing the food there.

In the event of reducing the brood-chamber to one colony, there will be a considerable increase of colonies either



SECTION FRAME —
SHOWING SECTIONS
IN PLACE. —

for next year's apiary or for sale. The same will be true also if some of the hives have three colonies, and it is decided to winter with two. Other advantages of the system might be mentioned, and further explanation and details given, but space would not permit.

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NO. 2.—COMB HONEY PRODUCTION.

Some Preliminaries to the Harvest—Wintering, Breeding, Etc.

BY R. C. AIKIN.

TO obtain strong colonies by the time of the honey-flow is one of the great problems. The time of the flow must be known, and all must be planned for that time.

There are localities where the crop-yielding nectar comes in the late summer or fall, and in such case it is easy to get the colony ready to do good work; but for an early summer flow from such source as white clover we usually can not get ready too soon.

One great difficulty in harvesting good crops of honey is to keep the colony from wasting strength in swarming. If we could *surely* control swarming so as to have it come when we wish, and not till then, we would make a great step forward. The colony that swarms becomes too weak to do much in storing surplus, and the swarm, too, must be hived in a contracted hive to be in shape for good section-work, and even when in a contracted brood-chamber the flow must be fair to very good if we get satisfactory work.

White clover being the most common source of nectar, we will study principally from a clover standpoint, and choose the latitude of southern Iowa and figure on dates that correspond to that, so those living farther north or south, or if for any other reason the season in the reader's location should be earlier or later, just make the proper allowance. As the clover will advance just about the same in a given time when once started in spring, so you make your estimates.

In southern Iowa spring may be expected to begin about March 1, and white clover to mature and be ready to yield nectar about June 15. In southern Missouri the dates would probably be two weeks earlier, and northern Iowa say two weeks later. Seasons vary from year to year, and crops mature fast or slow as the weather conditions may favor or not, yet each one can approximate very closely by a little observation and thought.

Having reached the opening of spring the object is to get the colonies to breeding well so as to build up to good strength as soon as possible. If wintered in the cellar there should be hatching bees near March 1, and the same when wintered outdoors if the winter has been an open and warm one. Usually southern Iowa finds a little brood started in the center of the cluster by Jan. 10th or 15th in strong colonies, and by the middle of February in all fairly strong ones. Weak colonies that can not get up enough heat must wait till the weather is in their favor.

Thus it comes about that some colonies are away ahead of others in breeding up in the spring. Much depends upon how the colony goes into winter, whether weak in bees, or with plenty of strong, young bees, or old and feeble, etc. Two colonies may go into winter with an equal number of bees, while if one has many old and but few young, while the other has the reverse, the young colony will outlive the old, and care for more brood in the late winter and early spring.

Then, too, one colony may have sufficient ventilation to carry off surplus moisture, and the next one be poorly ventilated and become wet, weak and diseased. But whatever the cause that makes the colonies unequal when they start breeding in late winter or early spring, if they do not get an equal start they can not give equal results. Perhaps three things are in the main to blame for the unequal start, viz.: Going into winter in varied conditions as to age and numbers of bees; variations in ventilation, allowing accumulation of moisture, thus affecting the health and life of the bees; and, third, the disposition and proportion of honey, pollen and empty comb.

It is desirable and important to have the colony even and in normal condition in the fall and winter, if possible, and if so we may expect much the same in the spring. Should the colony come out at the opening of spring with but a handful of bees, or so few in numbers that they can not get and hold heat to hatch eggs and mature brood, all they can do is simply to wait for warm weather, and when waiting they often pass to the "long wait." I want a colony to have hatching bees by the time they begin to forage in early spring, for those young bees remain close to the hive and brood nearly all of the time, and very much help on the breeding work; but should there *not* be hatching bees when spring foraging begins, then the death-rate soon leaves the colony in that weak, waiting condition, and, no difference how good the queen, they *can not* increase.

BREEDING CONDITIONS.

As before stated, it is natural for the colony, with sufficient strength or number of bees, to begin breeding in January, at least early in February. Bees should be hatching by March 1. Spring opening about March 1, and young bees then emerging, the colony is practically safely wintered. Up to this time honey should be close to the cluster, and in very easy reach of the bees so they can have unsealed honey in the cluster at all times. After the weather is warm enough so they can almost daily get out from the cluster to uncap and carry in honey, it is not so important that the stores be in so close proximity to the cluster.

I take it that most locations have early pollen, such as maple and willow, also a little honey, too. That was the condition in the part of south Iowa in which I used to practice, and in such breeding goes on about as well if the colony be let alone, probably better, than if meddled with. They need the encouragement of warmth and a little fresh pollen, and, if dry and warm, breeding can not be much helped by anything more we can do.

Should the location not have early pollen, and little or none is in the hive, then artificial pollen, such as flour mixt with bran, or chopt oats, should be placed in easy reach of the bees in the yard, or may be put right into a comb close to the brood. The thing that will encourage rapid breeding, if there is sufficient heat, is pollen and unsealed honey, and with these plenty of comb that the queen can freely use.

As the season advances and the colony begins to have so many hatching bees that the birth-rate is freely gaining on the death-rate, then is the time that one may spread brood *if it is done carefully*. The first act in that direction is to turn the combs rear end foremost, at least the ones containing brood. The brood-nest is almost invariably started *next the entrance*. If the combs containing brood be turned front end to the back, keeping them in the same position to each other in other respects, the brood now to the back and the *honey* to the front—thus arranged the honey will be removed from between the brood and the entrance, and placed *unsealed* close around and above the brood, and the comb from which the honey has been emptied will soon be occupied by brood.

This manner of spreading brood is quite safe—it is really causing the colony to do the spreading, and for stimulating breeding it is almost equal to a honey-flow. It also has this merit, that combs will be filled from end to end with brood instead of nearly every comb having the front end with brood and the back with honey.

Read this again, and think awhile over it—it is a valuable "kink."

Larimer Co., Colo.



California and Its Vast Honey-Resources.

BY RAMBLER.

WITH the rains that have fallen so bountifully upon our charming western country there is a marked revival of the hopes of our bee-keepers; and this hopeful influence must be exerting an influence upon the fraternity in the far East; for letters are dropping down upon us making all sorts of inquiries about this country, and just as tho we had never had a drouth.

It was naturally supposable that Cuba and the other islands that have been thrown open to the enterprise of our people would be the magnet to draw bee-keepers into new and untried fields; but it seems that, in spite of new domains and our dry seasons, California still has a magnetic influence; and as the aspects in the honey-business are rapidly changing in this State, it is no more than fair that we devote a little time and space to it.

I believe the boast has been made that California produces the largest honey crop of any State in the Union. I believe I have made some such remarks in the past myself.

We can estimate quite closely, perhaps better than almost any other State, as to the annual product. Our honey is shipped over a few transportation lines, and all we have to do is to look into the books of said lines; and when the grand total figures up to 300 carloads, and in addition to this a large home consumption, perhaps we are justified in our boast for largest production, and may be further pardoned if we sail our hats a little when we reflect upon the long trains of honey that are leaving our State. But this exuberance is all the result of a good season, and we have to use this qualifying term, for we have our poor as well as good seasons.

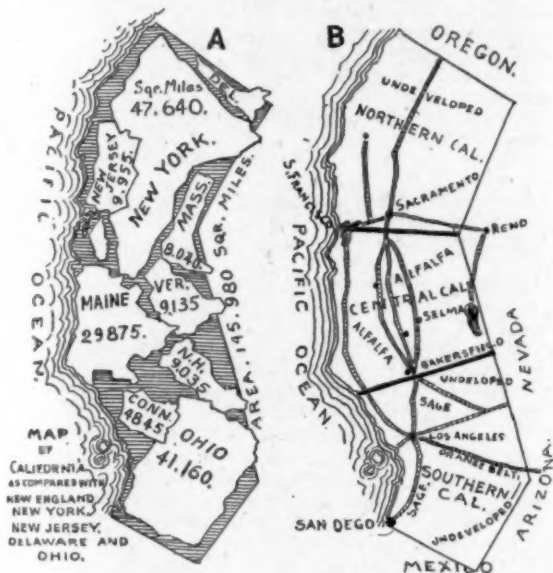
During the nine years I have been in Southern California, four of them have been total failures in honey-produce.

tion, while two others have been a partial success, leaving three good years in nine. Therefore, taking the average production during these nine years, I have come to the conclusion that in a series of years California will make no better showing than some of the Eastern States. There is not much comfort in that for those who wish to come here to embark in the bee-business; but let us look at the map of California, and make a few comparisons, review a little of the past, look at the present, and deal a little in futures.

For nearly 800 miles the western side of California is white with the spray of the Pacific Ocean. Measure off 800 miles on the Atlantic side of the continent, and it would include all the coast from Maine to Georgia. In area it equals the ten far Eastern States, as shown in the accompanying cut. Thus far the honey-production in this vast area has been confined to a few favored localities, and there are wide stretches of country where a bee could not live; but the prospects are bright for these desert places becoming our most reliable honey-districts.

The history of the bee-industry in California is decidedly interesting, and shows many market changes in the area of production; and those changes so favorably begun will go along with rapid strides. That the seeker for a good honey-location in this State may know just where to look, refer again to the maps. I have divided the State into three parts—Northern, Central and Southern.

The production of honey in California commenced in the Sacramento Valley, in the northern portion of the State.



As the resources of the State became more generally known it was found that the southern end was far the best for honey, both in quality and quantity, and in that portion the industry has reached its greatest development, and the honey produced in the seven southernmost counties will ever hold the reputation gained for quality; for in no portion of the State is there the amount of various sages that are found here; and while the valleys have been put under cultivation, and the sages destroyed, the canyons and mountain sides are still its home, and there will always be very good pasturage, for the land can be used for no other purpose.

It is in this portion of the State where those phenomenally large yields have been produced; but we can refer to them only as phenomenal, for they seldom occur twice in the same locality. These phenomenal yields have always been within the sage-belt, and from that source; and it is safe to say that, in the production of quantities of pure sage honey, California has seen its best days—but not its best days in the production of honey, mind you.

Referring to the little map of comparisons, we find that California has a population of a little over a million, while the Eastern States of the same area have 16,000,000. It is a foregone conclusion that the waste-places in California will rapidly fill up with people, bringing changes in the products of the soil, and more of a diversity in the honey-resources and in the quality of the honey.

That the honey-resources of California are changing, and will increase to greater proportions than ever, can be easily demonstrated in Central California. In this portion of the State, where a few years ago the land was so barren

that, upon hundreds of square miles, a bee could not live, there are now thriving farms and thousands of acres of alfalfa. Irrigation has made this great change. This area of alfalfa is now confined in a great measure to locations not at a great distance from the railroads. Outside of this area are thousands of square miles yet to be populated and brought under cultivation, and it is safe to say that alfalfa will be one of the principal crops.

We never hear of phenomenally large yields of honey in Central California, but they are blest with something better—no total failures. The honey-yield fluctuates more or less, as it does in all locations; but there is a reasonably sure income from the apiary every year; and the carloads of honey from Central California, which are already numerous, will steadily increase. In the eastern portion of the middle of the State we find Owens River Valley, not of great size. It is hemmed in by immense mountains, and here the bee-keeper produces alfalfa honey of the finest quality. Owing to location, or some other cause, the honey is of lighter shade than honey from the same source in other portions of the State.

The development of the honey-resources in Northern California has not kept up with the development in the south. It is a mountainous country; and in those portions where honey can be produced, the cost of transportation to market eats too much into the profits to make it a paying business at the present prices of honey. It is safe to say that there is an area in Northern California equal to the area of New York State, where there is not a carload of honey shipped; and where it is produced it is sold in the limited home market. It costs as much to ship honey from the Oregon line to San Francisco (a little over 300 miles) as it does from San Francisco to New York. There is a future, however, for Northern California honey-production. With more and competing lines of transportation, more settlement of waste-places, and more alfalfa, carloads will begin to move out. Many of our prominent bee-keepers, even in Southern California, see in alfalfa the great and permanent honey-plant of the future.

This great forage-plant is in direct accord with the interests of every agricultural community. Alfalfa first, cattle next, then the flowing of milk and honey, typical of the highest prosperity of a State.

California is justly noted for its immense fruit-industry, and much has been said about this source of honey. However, it cuts but a small figure. The time of bloom is of short duration, and the secretion of honey not abundant. The orange-bloom, where the trees are abundant, gives a fair surplus; but it would not pay for the bee-keeper to depend wholly upon that source alone for his living.

At present the best locations for success in honey-production in California are found all the way from the Sacramento Valley to San Diego; and the bee-keeper who intends to move to this State should write to the Chamber of Commerce in San Francisco and Los Angeles for literature giving much information about the respective ends of the State. In fact, it would be a good plan for almost anybody who would like to know more of the resources of this great State to send for this literature.

Then it would be a good plan for the emigrant, when he arrives, to take time to look the ground over. Ride by rail and wheel thru the central portion of the State. The largest alfalfa districts are between Fresno and Bakersfield. Two weeks' time could be profitably spent in looking this field over, and a longer time could be spent in Southern California; for you can see, by referring to the map, that the great State of Ohio covers only about half of this end of California.

When a location is selected it is of the utmost importance that the occupant of it make up his mind to like his new home, and laud it to the skies upon any and all occasions. That is always the first duty of all true Californians.

I am sorry to know that some people are always cursing their lot and their surroundings. Well, we want no such people here. Their somber souls would be sadly out of place in this God-given land of health and sunshine; and wherever a number of such people congregate, there you will find a dead town and a well-filled graveyard.

In thinking over the matter of a change of residence, do not hesitate on account of health or old age, for this is a healthful climate, and, as Dr. Gallup has it, "It is the old man's paradise."

Taking it all in all, the bee-keeping industry of California has a brilliant future; and all the present members of the fraternity have to do is to stick to the business and hasten the day of great prosperity.—Gleanings in Bee-Culture. Los Angeles Co., Calif. □

CONVENTION PROCEEDINGS

Report of the Colorado State Convention.

[Continued from page 118.]

PACKAGES FOR EXTRACTED HONEY.

Mr. Pease—Tin packages can be used again. The fiber package can not. Mr. Doolittle advises wooden boxes.

Pres. Aikin—I don't know anything about them from experience.

Mr. Root—I think a lithograph label is so much more attractive than the printing on the fiber package that it would pay the difference in price.

Mr. Porter—There has been some talk of a uniform package for extracted honey. If enough would use them, it might pay to have a stamping machine of a certain size.

[The secretary has looked up this matter, and found that the dies and other machinery for making 10-pound tin honey-packages would cost about \$300, and for making 5-pound packages about \$200.]

H. Rauchfuss—One man should put up the honey to get it uniform. A uniform package of honey would drive corn syrup out of the market; 35 cars of corn syrup a year are used here.

SECOND DAY.

Mr. Lyon thus introduced this subject:

OVERSTOCKING OF LOCALITIES:

There is no question that there is great danger of overstocking a field. Locality and the man have everything to do with it. A man capable of caring for bees as he would care for other things will not feel the overstocking as another would. Wintering has a good deal to do with this question. Our winters here are hard, and we have sunny days that encourage the bees to fly to their detriment. It would pay to close up the hives if it could be done at all. Fifty percent of an apiary was lost at Longmont last winter. The cover was sealed down, and the moisture could not escape. A few years ago a man moved his bees to a quarter of a mile from mine, and got no crop of consequence. It is the same as with cattle; there is such a thing as overdoing. I have not hitherto kept over 125 colonies in one place, but next season I will try 150 or 200. It will save the expense of one man. But we can not be too careful of overstocking. There is no question there is room for all. If one sees his neighbor getting a good crop, it is folly to move in close to him. The man that gets his bees in shape to gather the nectar will get the honey.

Mr. Moon—There were two apiaries, one a mile and one a mile and a quarter from mine, and the crop is better since they moved off. I have 330 colonies in one apiary, and there are 100 more within a quarter of a mile. But there are immense quantities of alfalfa and sweet clover near by. My crop this year was 865 cases, the largest crop I have had, from about 275 colonies, spring count.

F. Rauchfuss—Mr. Moon keeps more bees in one place than any other person in Colorado.

Mr. Lyon—Wouldn't Mr. Moon get more if he kept his bees in different places? I received one-third more by dividing up.

Mr. Thompson—Within a radius of a mile or so, or a circle of something like two miles in diameter, perhaps $2\frac{1}{2}$, there are some 700 or 800 colonies at the town of Montrose. Wm. Willis has 60 or 70 colonies right in the midst of them, and gets a bigger average than any of the others. George Hone has about 270 colonies in his home apiary, and about 240 colonies in his out-apiary, about a mile and a quarter distant, and there are a number of colonies in the neighborhood. He thinks his region is somewhat overstocked, but he gets fair crops. He is considered a good bee-keeper. Mr. J. R. Penniston evidently thinks his locality is overstocked, for he is thinking of selling 40 of his 60 colonies and getting as much honey from the remainder of 20 as from the 60. There are about 100 acres of alfalfa accessible, and a total of 100 colonies in the neighborhood, including his own.

H. Rauchfuss—In this locality it is hard to keep up the number of colonies in an apiary when it exceeds 75 or 100. Before they reach that number, they increase; afterwards,

they do not. I believe an alfalfa locality is easily overstocked. Sweet clover is better. Last year we had hardly any honey from the first crop of alfalfa at a time when beekeepers close to the foothills were getting a fair flow. One year the flow commenced June 25 and stopt July 9. If sweet clover had been in the locality it would have continued. It was not because the alfalfa was all cut; 80 acres remained uncut after that, but there was no gain.

J. B. Adams—I believe the reason a large apiary does not increase here is that the yield from apple-blossoms is very light.

Mr. Lyon—Believing my locality was overstocked, I moved to Longmont. That shows my faith in the possibility of overstocking. We are just on the point of overstocking at Longmont.

H. Rauchfuss—Along Bear Creek there are 2,000 colonies within seven miles, including several large apiaries. The cultivated portion is not seven miles wide, and there is much barren country included. But it is an exceptionally good locality. There is much sweet clover, and the foothills, which furnish spring flowers, are close.

F. Rauchfuss—I think Mr. Adams is right—we can not breed up our bees in the spring in the average alfalfa locality here. That is seen by comparing the apiaries east of Denver with the bees at the foothills. In regard to overstocking, the bee-papers have been making various allusions to the large unoccupied fields of Colorado. All the good fields within easy reach are occupied. Only about one-twentieth of the area of the land is in alfalfa, and only in 14 counties, principally in the valleys of the Platte, Arkansas, Grand, Gunnison and Uncompahgre. The biggest portion of Colorado is unfit for bee-culture, owing to a wide area of high mountains and desert lands, fit only for grazing.

Mr. Porter—At Lakewood there are at least 800 colonies within an area of $2\frac{1}{2}$ miles square. The yield is not so good there as five or six years ago, altho sweet clover has increased.

H. Rauchfuss—In former years it seemed as if alfalfa yielded more than it does now.

Ch. Adams—One reason is that hay is cut earlier than then.

One year there was a great deal of bloom, and I could not see more than a dozen bees on it. My average was 17 pounds.

Mr. Lyon—Another very important reason has not been taken into consideration. There are ten bees now on the flowers where there used to be one. That depends upon the strength of the colonies—that is the man part of it. It is true that alfalfa does not yield some years as it does others.

Mr. Porter—The dairy interests affect the alfalfa around Denver, and in the northern part lamb-feeding, which has assumed great proportions, requires tender alfalfa, cut early. The main point is the grasshopper. Take away the grasshopper and you will double the yield. It prefers the bloom.

A Member—The grasshoppers eat the alfalfa which is left along the ditches, and the sweet clover also.

Pres. Aikin—I never cared to have more than 100 colonies in one place, partly because the robbing is much worse in a large apiary, and also the annoyance in working among the bees. I prefer a small apiary. I think Mr. Lyon put it mildly. There are probably 20 bees now where there was one formerly. The farmers cut later this year in my locality, and my crop was better. The first year I had the best flow, and the bloom was continuous. I can almost time the flow to a certainty by the amount of hay cut. I seldom get any from the second bloom. At present, the farmers aim to cut it just as it is in bloom. Last year there was an abundance of moisture in my locality when it was dry here, and the result was, the farmers got behind in their work, and there never was such a good flow as this year, because the alfalfa never had such a chance to bloom. Three or four years ago there was lots of bloom, but little honey. There were black spots on the leaves. One season there was a large amount of web-worms, and if the grasshoppers commence the flow is no good. Overstocking, therefore, is not all. Mr. Farr told me he kept a large number of colonies in one place in Utah, and could not see that the yield was reduced enough to pay to divide. For some reason in Iowa the flows dropt off. The bees decrease so there are not nearly so many, but to-day they don't get the yield they used to.

Mr. Lansdowne—I agree about the grasshoppers. One year I sowed alfalfa with wheat, and the grasshoppers ate it all off.

Prof. Gillette—I think the damage from grasshoppers

is overestimated. When they are not very abundant they eat about the borders of a field, and make quite a show of damage. There is no better method of destroying them than to use the hopper-dozer or pans, or the plow, or cultivate in spring; altho a bran-mash of one pound of arsenic to six pounds of bran, with water, around the borders of a field, is good.

H. Rauchfuss—That is just where we don't want them to eat. That is where the alfalfa and sweet clover is not cut by the mower; there, and along the ditches. But last year we had hardly any grasshoppers, and still the flow was not good until the latter part of the season.

Prof. Gillette—I think they injure the sweet clover as much as the alfalfa.

Ch. Adams—That bran-mash is pretty strong. Around Greeley I used a small handful of arsenic to half a bushel of bran, with a very little water; otherwise they would not eat it.

Prof. Gillette—The proportion I mentioned always seemed to me very strong. It was used originally with white arsenic, which is tasteless.

J. B. Adams—I used one to two pounds of bran, with black molasses. It did the business. They ate it all up.

USE OF SEPARATORS.

Mr. Tracy—I use one or two separators in a super, and believe in using as few as we can. We want our sections to weigh as nearly a pound as possible. You will not find many combs built crosswise where there is a separator to every three rows.

H. Rauchfuss—I want a separator between each two rows. Bees don't seem to enter a super as readily when separators are used, but they work just as readily after they are started. Separators make the number of unfinished sections less; and when full sheets of foundation are used, and one drops, only one section in a row is spoiled, when separators are between each two rows. Then no combs project, and much time and annoyance is saved in getting the honey into the shipping-case. If the colonies are strong enough to enter a super all at once, they will build straight combs without separators, but if they enter on only one side, they will not.

Mr. Tracy—I don't care if my honey is not all capt. I am surprised at such a bee-keeper as Mr. Rauchfuss taking the stand he does.

H. Rauchfuss—I wouldn't care to do any extracting from unfinished sections; and old combs don't make first-class comb honey the next year. Last spring I didn't use more than 50 old sections.

Mr. Allen—I have used separators, and found many combs fastened to the separators. I have concluded not to use them. I found, too, that the combs were thinner, and scant in weight. Then separators take up more work and time to put them in.

F. Rauchfuss—Have you ever observed at what stage of comb-building the attachments were made to the separators?

Mr. Allen—No.

F. Rauchfuss—In the majority of cases those connections are made after the comb is finished and sealed, showing that if the honey had been removed when it should have been, there would have been no such trouble. In one instance last season a bee-keeper had such connections made to his separated honey, but the braces were attached to the capt comb, showing they were built after the honey was sealed. The same man had another lot of supers without separators, but the honey in them was unsalable. He used only one super on a hive at one time. That explains it.

H. Rauchfuss—More depends upon the management than upon the bees, in this respect. If only a small starter is used, many sections will be spoiled when no separators are used. Out of 350 cases of comb honey that I produced last season with separators and full sheets of foundation, not one section was "tied" to the separator. In one lot of 25 supers only two sections were spoiled, and that was because the foundation had dropt.

Mr. Lyon—I would not use one separator. I can produce better honey without.

F. Rauchfuss—Why?

Mr. Lyon—Because with separators honey can not be produced heavy enough to suit the Eastern market.

F. Rauchfuss—Here is a quotation from a letter from Peycke Bros., who last year handled over 20 cars of honey:

"We notice that you demand average weight on No. 1 comb honey should be 22 pounds net. Our experience has been that where separators are used (and we advise that the use of these be made one of the most stringent rules of the association) it is not an easy matter to reach the 22-pound

average weight; but with our extensive trade, which reaches all thru the Eastern States, we have never found any objection to light weight. We had several cars out of Utah last year which averaged from 20½ pounds to 21 pounds per case, but the honey was so perfect and so pretty that it took the preference over everything else that we had. We consider it of much more importance that each section is perfectly filled than that the comb should be thick. By this, of course, we do not mean to say that we favor a reduction in the size of the present section."

Mr. Lyon—I have had as large a correspondence with the East as any one except the secretary, and can say that my experience is different.

Ch. Adams—I got a letter from Kansas City which gives the same advice as given by Peycke Bros.—"Be sure to produce honey with separators." Bees will gather as much honey with separators as without.

F. Rauchfuss—Another dealer corresponding with reference to one or two cars requested *only* separated honey. Another firm, in Pennsylvania, also preferred separated honey, and was rather partial to the lighter weight.

Mr. Lyon—As a rule, the average bee-keeper produces better honey with separators.

Mr. Whipple—I have had the best satisfaction with separators, tho this year I had more combs than usual fastened to them. The standard sections will be light, it is true. I ordered some 1 15/16 sections, and found that every time a case would average 24 pounds net. But the honest weight doesn't cut any figure. I use separators all the time, and have adopted the standard 1½ section, and get the same price. I'm no worse than anybody else.

Mr. Tracy—The first 24 cases of mine weighed only three pounds less than enough to make an average of 24 pounds each.

Mr. Whipple—I weighed 15 cases of mine this year, and they overran 22 pounds net. The buyer said that's good enough.

I am pleased with the Golden method. From three colonies I took five supers of 28 sections each.

Pres. Aikin—When I first came to Colorado the flow was the best, and I averaged 150 pounds. I used two separators to every 10-frame super. For that rapid, heavy flow, two separators were enough. But in general, not half the bee-keepers can pull out sections where no separators have been used without damaging them; and if this is so, only a small percentage of *dealers* can. I handled this year a carload of comb honey besides my own. The buyer said, "Produce with separators all the time." He went out to see one man's honey produced without separators, and tho he wanted all the honey he could get, he told him to sort out only the best, and he would give him \$2.15 a case for it. It is not a question of weight. The reason we use separators is to have the honey within the wood. Another reason is, the retailer must handle something which preserves the average weight in each section. True, a little more room is needed, but that cuts no figure when you get 25 or 50 cents a case. In a good honey-flow the honey is uniform, and then almost every fool can produce a good article. In a slow, light flow the case is different. The buyer told me I could have all I could make over 5 cents in handling one lot produced by weak colonies without separators. Somebody said some colonies produce burr-combs and others do not; but when any colony is crowded in the flow, that non-burr-comb strain is going to build burr-combs. If an honest section is wanted, make a larger section. When the separator does not come within ¾ of an inch of the bottom or top of the section, and the colony is crowded, or the flow slow, the bees will extend that part of the comb above and below the separator. Separators are all right when one knows how to use them, and they make the proportion of finished sections larger.

J. B. Adams—Do you prefer wood or metal separators?

Pres. Aikin—There is not much difference.

Mr. Whipple—I sell my honey more readily by using separators than I can without. The parties that buy to retail prefer the straight combs.

Mr. Porter—In the sales this year the buyer did get all the non-separated honey, but that was because of the scarcity of honey.

Mr. Whipple—I got \$2.40 a case for an average net weight of 22 pounds, in the early part of September.

[Continued next week.]

The Premiums offered on page 142 are well worth working for. Look at them.



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NOTE—The American Bee Journal adopts the Orthography of the following Rule, recommended by the joint action of the American Philological Association and the Philological Society of England:—Change "d" or "ed" final to "t" when so pronounced, except when the "e" affects a preceding sound. Also some other changes are used.

A World's Congress of bee-keepers will be held in Paris, France, Sept. 10, 11 and 12, 1900, during the Exposition. Our National Bee-Keepers' Association should be represented. The delegate might be selected at the Chicago convention, next August. We nominate Mr. C. P. Dadant. He, no doubt, would be willing to bear a good deal of the necessary expense in order to have the privilege of visiting his native land. And he would be an excellent representative of the bee-keepers of the United States.

The Bee-Column in an Agricultural Paper is sometimes a good thing, and sometimes it works mischief. Depends upon who takes care of it. An agricultural paper of good standing to hand has for spring the unqualified advice, "The hives should be lookt over and the weak colonies fed." Saying nothing about looking over "hives"—colonies no doubt being met—suppose the owner of bees tries to follow the advice, and finds a colony that plainly has hardly half as many bees as the other colonies. He says to himself, "That's a weak colony, and it must be fed." So he feeds it, regardless of the fact that it already has more food than it can possibly use, doing more harm than good by its disturbance.

"A well arranged apiary that is simple and convenient is thus described by an Illinois subscriber;" and then fol-

lows a description so complicated that this deponent can not make it out.

Five reasons are given for keeping bees, the first being that bees "work for nothing and board themselves, only requiring a house to live in," with no hint that they require any care or labor on the part of the bee-keeper. The third reason for keeping bees, "Because honey is the only product on the farm which will not only spoil if not hurried to market." Must be that writer thinks grain is raised only in elevators!

Horseradish for Bee-Stings is spoken of in high terms in several of the foreign bee-journals. Bruise the leaves and apply the juice to the wound. It is even said that if the hands be well rubbed with horseradish juice it will prevent their being stung.

The National Bee-Keepers' Association is the organized body of bee-keepers that now stands to defend bee-keepers and bee-keeping against adulteration and wrongs of other kinds; the amalgamation of the two old societies being now an accomplished fact. The present Association is stronger by 63 names than either of the old ones was, and its future is bright with promise; there being now no divided interest, it becomes every bee-keeper to throw in his influence and his dollar. Whether you are a member or not you will undoubtedly be benefited by the work of the Association, but the benefit will be vastly greater if each bee-keeper joins. Send your annual membership fee (\$1.00) to the Bee Journal office, if more convenient, or to General Manager Eugene Secor, Forest City, Iowa.

Early Orders for Bee-Supplies usually receive the most prompt attention by the dealer. Many bee-keepers wait until the last minute, then order by return freight, and if they don't get the goods at once, feel greatly disappointed. Now, one who stops a minute to think, would see that no dealer can fill every order the same day it is received.

The best way is to order early, so as to avoid any possible rush later on that might cause vexation and loss to the bee-keeper.

In many instances, of course, one cannot know exactly what will be needed very far in advance of the season; in such case we would suggest that at least some of the goods be ordered early, and, if it is found that more are needed, then order again.

Many bee-keepers will also find that if they have their supplies on hand early, they can put in some time at odd hours in getting them all ready for use, so that when the time comes to use them they won't have to stop other important work to get things in shape.

Suppressing Hives.—In one of the bee-papers a query appears about a certain hive which has not been pushed to the front as have some others. It is insinuated that certain other hives were pressed upon the bee-keeping public to the exclusion of the one in question. Now, that was really too bad, wasn't it? Just to think that any one would try to get every bee-keeper to use a certain kind of hive in preference to a certain other kind!

One might as well ask why any one of the numberless dead bee-papers weren't pushed on to success by those already established. We are not of the kind that expect that our bee-paper competitors are going to work very hard to make the American Bee Journal a success. That is what we are here for. Neither should any one expect that every manufacturer is going to turn in and push some other hive than his own. The manufacturers are not in business simply for their health, any more than bee-keepers produce honey just for fun.

The **Western Bee-Keeper** was the name of a new bee-paper started in the West a year or so ago. We learn that it has recently turned its subscription list (?) over to the **Progressive Bee-Keeper**. We did not announce its advent, as we failed to see wherein it had sufficient merit. It certainly was no credit to the printer's art, and we failed to see where it could be of much advantage to anybody—not even to its publisher. This latter opinion has now been verified, by its giving up the effort.

There is generally an amusing feature connected with the starting of new bee-papers. They usually want to exchange advertising space with the old and established papers, instead of paying cash for it as do others. Of course, the **Western Bee-Keeper** followed that rule, and when the application was received here, we simply quoted regular advertising rates, and that was the last heard from that quarter. They had practically nothing to give in return on an exchange basis, and certainly could not afford to pay cash for advertising a new paper of so little merit.

While it really is none of our affair, we can't help feeling sorry for the poor, misguided people who think there is money to be made in publishing new bee-papers. In about forty-nine cases out of fifty they have proven to be a delusion and a snare. But we presume we shall see new bee-papers in the future as in the past—with about the usual result.

Reformed Spelling seems to stir up some people to a paroxysm of foaming and frothing that is fairly amusing. A friend sends a clipping from the **Daily Telegraph** of Philadelphia for Feb. 5, and among the pet names applied to the reform are, "craze—delusion—ridiculous—deformed—absurdity—silly impertinences." The **Telegraph** says: "Some journals which otherwise are beyond reproach are found to be so injured by it as to have their usefulness seriously impaired." Doubtless the usefulness of the **American Bee Journal** is so seriously impaired by an occasional word changed in its spelling that its readers will not be able to secure as much honey as they otherwise would!! The way to be certain to succeed with bees is to take a paper that puts *ugh* on *tho*, and *ue* on *catalog*. The flowers will yield nectar then!

The Weekly Budget

MR. O. O. POPPLETON, writing us from Dade Co., Fla., Feb. 13, said:

"This has been a very hard winter on bees in Florida, so far as I can hear. One of my apiaries is doing first-class, one very good, and two very poorly."

MR. A. H. COWAN, eldest son of Editor Thos. Wm. Cowan, of the **British Bee Journal**, was married Jan. 9. Mr. Cowan has a fruit-farm in Placer Co., Calif., where he lives. The **American Bee Journal** wishes the happy couple a long and blissful life.

PROF. A. J. COOK, of Los Angeles Co., Calif., under date of Feb. 14, wrote as follows:

"The outlook for the season in Southern California is not at all encouraging to the bee-keeper, or even to the general farmer. While we have had almost as much rain as we had during the entire season of a year ago, we yet need a great deal more for a successful year. Northern California has had fine rains. The southern part of the State is in more need of many and copious showers which must come within two or three months. Usually there are huge banks of snow on the tops of the mountains, while now there are

almost none. We are all hopeful that we shall yet have the rains so much needed to bring the usual success to this end of the State."

THE WISCONSIN CONVENTION PHOTOGRAPH, taken by W. Z. Hutchinson, is ready for delivery to all who desire it. It is 8x10 inches in size, mounted on a 10x12 heavy card-board, and will be sent postpaid for 75 cents. It is one of the best and clearest convention pictures we ever saw. If you wish a copy of it, send the above amount to W. Z. Hutchinson, Flint, Mich.

THE ELKHART CARRIAGE AND HARNESS MFG. CO., of Elkhart, Ind., have issued one of the best catalogs for 1900 that have come to our desk. It contains 144 pages and cover. Practically every page is illustrated, showing their excellent vehicles and harness. This is their 27th year. Better send your name and address for their catalog, not forgetting to say you saw their advertisement in the **American Bee Journal**.

DR. E. GALLUP, of Orange Co., Calif., we notice by a market newspaper item received last week, has just lost his wife and infant child. The death of the mother was a peculiarly sad one, tho no possible means were neglected to avert the sad ending, three skilled physicians being in attendance. Our sympathy, as well as that of bee-keepers everywhere, will go out to Dr. Gallup in his deep sorrow.

MR. JOHN F. CROWDER, of Fresno Co., Calif., says the **Tulare Advance**, is perhaps the most extensive bee-keeper in Central California. He has about 3,000 colonies of bees in all. These he has divided into apiaries of about 300 each. His 10 apiaries are located usually about three or four miles apart, and are within a radius of from 10 to 15 miles of his home. Mr. Crowder started about six years ago with 25 colonies. By careful work and much study he has been able to build up what is perhaps the largest bee-business controlled by one man in the United States. He employs quite a number of men in his apiaries, and keeps them up in just the right shape. He produces principally extracted honey.

HON. EUGENE SECOR is the president of the Winnebago Co., Iowa, Farmers' Institute. He has mailed us a copy of the program of their fourth annual meeting, which was held Feb. 13 and 14. On the last page of that program we find the following, which is well worth your reading and heeding, tho it is not exactly on bee-keeping:

"Agriculture is the oldest employment of man, but it does not follow that there is nothing to be learned in farming. It is not one of the exact sciences, for climate and other ever-varying conditions require varying methods and practices. What is best in one locality may not be in another. The annual rainfall, extremes in heat and cold, distance from market, kind of soil, etc.—all have an influence in determining what our farming practices should be if we would obtain the best results. There are many problems of agriculture not yet solved. If we are satisfied with ourselves, and believe that the practices of our forefathers can not be improved upon—that there are no better ways, no better implements, no better crops than they knew, then there is no reason to read, study or watch what our wide-awake neighbors are doing. But if we think there is room for improvement in our county we ought to use every means to that end. The highest farming requires as much brains and study as any other calling. The farmer should not regard his work as beneath that of any other station on earth. And he should pursue it so intelligently and skillfully as to command the respect due to him. He should be a student. He should avail himself of every help. The county institute was created by law to increase your interest and efficiency in agriculture. Whatever does that should also increase your wealth and happiness. Attend the Farmers' Institute. It is planned for your benefit."

After all, what is good advice for the farmer is pretty good for the bee-keeper also.

Queenie Jeanette is the title of a pretty song in sheet music size, written by J. C. Wallenmeyer, a musical bee-keeper. The regular price is 40 cents, but to close out the copies we have left, we will mail them at 20 cents each, as long as they last. Better order at once, if you want a copy of this song.



CONDUCTED BY

DR. C. C. MILLER, Marengo, Ill.

[The Questions may be mailed to the Bee Journal office, or to Dr. Miller direct, when he will answer them here. Please do not ask the Doctor to send answers by mail.—EDITOR.]

Buying Bees or Rearing Them.

Which would be the cheaper to stock an apiary, buy the bees or buy sugar and rear them? I have been reading bee-papers and books a year, and have an idea I could rear them cheaper, but I would like to know what you think.

TENNESSEE.

ANSWER.—You can probably buy sugar and rear bees for less than you can buy them, altho of course that depends upon what you have to pay for the bees; but a still cheaper way would be to rear the bees on natural stores without buying sugar.

Uneasy About Bees in the Cellar.

Please give me some advice in regard to my bees that are in the cellar. This is the first that I ever wintered them in the cellar, and I don't know whether they are doing well or not. My cellar is under the dwelling-house, and is in clay soil, and I think is rather damp. I have to build a fire in it in cold weather to keep the temperature up to 45 degrees, and I have kept the dead bees swept up clean. The bees seem to be doing very well with the exception of one colony which has dysentery, but not very bad. I have 50 colonies in the cellar and eight on the summer stands.

INDIANA.

ANSWER.—From what you say, you are probably managing all right. See that the air of the cellar is kept pure, opening the door or window any night that is warm enough. It is not long now till bees in Indiana can be put on the summer stands, and a flight will cure the diarrhea promptly.

Honey Taffy—Clover for Lawns.

1. How can I make honey taffy or candy? I tried several times to make honey taffy, and every time it gets dark and tastes as if it was burned, but it can't be burned as I am very careful that it doesn't boil fast.

2. I sowed grass seed on my lawn and most of it turned out to be weeds. I was told then by a friend bee-keeper that if I would sow clover seed on the lawn it would kill all the weeds and make a fine lawn. I want to know whether this is true, and what kind of clover seed would be the best.

NEW JERSEY.

ANSWERS.—1. If you will pardon the statement, the probable truth is that you did burn it after all. Honey is very easily burned, and doesn't need to boil very fast to be burned. The whole secret is to cook it very slowly. Don't put it on too hot a place on the stove.

2. It's asking a good deal of clover to kill out weeds. Still, it may do so, especially if the weeds are mowed down occasionally as short as the clover. White clover is the best clover for a lawn.

Bees Killing Off Each Other—Shavings to Absorb Moisture.

1. My bees have been fighting for the last week or ten days. They have killed off a good many. There will be a bunch of bees in two or three places on the alighting-board, and as soon as they kill one they jump on another. They have plenty of honey. My neighbor's bees are doing the same thing, and when the weather is so bad they can't fly, they are fighting just the same at the entrance.

2. My hives are on the summer stands in winter, and in spring, when I open them, I find them very damp inside. Would it do to fill a super with dry pine shavings, and put it on to take up moisture?

OREGON.

ANSWERS.—1. With no further information, it is hard to tell what is the trouble. It may be a few robbers are trying to obtain unearned treasures, and are taking their punishment therefor, and if the number is not great it doesn't signify. It may be that bee-paralysis is present, and the well bees are getting rid of the sick ones. If the persecuted bees are robbers, they are very alert, trying to escape, and generally succeeding in escaping, from their tormentors. If the worried bees are sick, they appear sluggish, making little attempt to escape, perhaps swollen, shiny, with a

trembling motion. As far north as Oregon paralysis ought hardly to be a very serious matter. In either case, if the colonies are strong, you will probably find matters mended as soon as good weather for flying comes.

2. Yes, planer shavings are the kind to use, as ordinary bench shavings made by a carpenter with a hand plane do not pack close. Some practice putting hot bricks on top to dry out when a warm day comes, and opening up a little at such a time helps to dry out.

Unslackt Lime for Dampness.

I have about 50 colonies of bees in the cellar under the house and it is rather wet. Would it do any harm, or injure the bees, if I put chloride of lime in the cellar?

WISCONSIN.

ANSWER.—Common unslackt lime will cost less and will be better.

Swarming and Producing Comb Honey—Italianizing.

1. I have two colonies of Italian bees, and I wish to run them for comb honey, and still get one or two swarms from each. I also have three colonies of blacks in box-hives, and I wish to put them in movable-frame hives, and let them swarm. How many times should I let them swarm in order to get the best results. My desire is to run for comb honey exclusively.

2. Would you Italianize the blacks, or let them be till in the fall?

CALIFORNIA.

ANSWERS.—1. Certainly don't let them swarm more than once if you can help it. Put the swarm on the old stand with the mother colony close beside it, moving the mother colony to a new stand a week later. Perhaps you will do as well to leave the blacks in the box-hives till they swarm; then treat them as mentioned.

2. It will probably be as well to wait till near the close of the harvest.

Fence Separators—Cause of Bees Perishing.

1. Are fence separators intended to be used with plain sections only, or will they do with any style of section?

2. I am wintering my bees outside, packed with sawdust and chaff cushions on top, and I notice that the bees in one or two of my colonies persist in flying out, and of course perish in the snow, while the rest are quiet. What is the probable cause, as they have all first-class stores?

ONTARIO.

ANSWERS.—1. Fence separators may be used with any kind of sections, but separators suitable for the plain sections will not do for sections with insets. For the latter, fence separators must be differently constructed.

2. Hard to tell. The difference may be in the bees themselves. Some bees seem more uneasy than others under like circumstances. It is possible the sun shines more freely into some hives than into others. It is not a bad plan to put a board in front of the entrance at a time when bees fly out to their detriment.

Italianizing—Distinguishing Queens.

1. I have 18 colonies of bees, partly Italians and partly blacks. Would it be possible for me to kill the old black queens when they swarm and put in a laying Italian queen instead, when I hive them, with any degree of certainty? Or, would it be better to take the nucleus that the Italian queen was reared in, and hive the swarm with it?

2. And what would be the best to introduce in the parent hive (the hive the swarm issued from), a laying queen, a virgin queen, or a ripe queen-cell, after cutting all the cells out of the hive and being sure there are no virgin queens present in the hive?

3. Is there any way of telling a three-banded queen from a five-banded one, before they have any bees hatch from their eggs, supposing, of course, they are purely mated? I don't think there is, but my opinion doesn't amount to much.

ILLINOIS.

ANSWERS.—1. It would be safer to let the swarm run in with the nucleus, of course first killing the old queen.

2. It would be largely a matter of your own convenience, either one being all right.

3. Your opinion is all right in this case, at any rate.

"The Hum of the Bees in the Apple-Tree Bloom"

is the name of the new bee-keeper's song—words by Hon. Eugene Secor and music by Dr. C. C. Miller. This is thought by some to be the best bee-song yet written by Mr. Secor and Dr. Miller. It is, indeed, a "hummer." We can furnish a single copy of it postpaid, for 10 cents, or 3 copies for 25 cents. Or, we will mail a half-dozen copies of it free sending us one new yearly subscription to the American Bee Journal at \$1.00.

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GENERAL ITEMS

Bee-Keeping in Oklahoma.

I am trying to interest people here in bees and honey, but I find conditions, climatic and otherwise, somewhat against me. I have had bees here five years, and I know they will do well if handled properly. They require to be fed and strengthened up very early in order to store any surplus. Bees must be in condition to store honey here, by May 1. One colony last season stored 48 finished sections, while no others completed a super full. I find bees will empty unfinished sections if they are scraped with a knife.

Bees are now in good shape, and have flown every week this winter. I hope for a good season this year. **F. VAN DE MARK,**
Payne Co., Okla. Ter.

Fears a Dread Bee-Disease.

I notice on page 100 an article by Abel Gresh, stating that he has amongst his bees a disease which seems to be similar to the New York bee-disease. I was quite alarmed to note this fact and desire to investigate the matter thoroly if I can possibly do so.

I have noticed a peculiar odor about my bees ever since they were placed in the cellar, and did not know what to attribute it to, and in fact do not yet know whether it is a real or an imaginary odor. Will some of the readers of the "Old Reliable" please inform us as to its peculiarities?

Do bees affected with this disease give off a different odor when placed in the cellar? Is cellar-wintering favorable to its spread?

Come, let's rouse up and find out what this disease amounts to, and to what extent it has already spread. I fear that it has gone to far greater proportions than any one thinks.

I would like to be prepared to fight this disease when it first makes its appearance. If it comes here, and so would a host of other bee-keepers in New York and Pennsylvania.

I am getting somewhat alarmed over the matter, and do I not have good reason for it? Most certainly. Are not my future prospects at stake? If the disease should ravage my bees would it not deprive me of my only source of income? Are these not good reasons for being alarmed? I think I have good reasons for sounding a note of warning.

There has never, since I have kept bees here, been any disease to bother me, and I fairly tremble at the thought of having to encounter this new malady. There is but one way out of it, and that is to stay at my post and be prepared to defend myself against its ravages.

G. F. TUBBS,
McKean Co., Pa., Feb. 15.

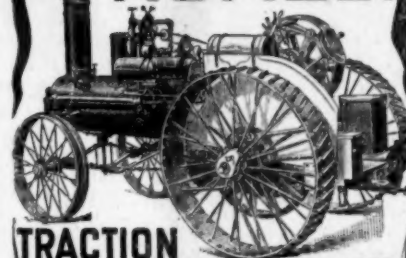
Hunting Wild Bees.

I want to add my experience in hunting wild bees, to that of Massachusetts as given on page 86. I hunted bees a good deal in my younger days, having found many a bee-tree, and have caught bees from the wild flowers late in the summer and in early autumn, and set them at work from the stand. I have smudged or burned honey-comb after the frosts had killed all the flowers; have lined them and cross-lined them; have moved them several times where they went long distances; have moved them beyond the tree, and of course have watch them; I never had any trouble about their coming back; only these two things I have noticed:

In the first place, it takes longer when you go beyond the tree to get them started, than it does while tracing the line: in the second place, my observation has been, after leaving the stand on which the bait

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49A17t

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44A26t

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until to-morrow night or, better still, call the attention of the members of your family who have a taste for puzzles, to it. Some of you can hardly fail to get it. It is purely a test of quick-witted observation without any element of chance. There is only one answer that can be obtained by properly finishing the letters and supplying the space to make words of the letters. We give below two lines of incomplete letter puzzles. By solving one of them you earn a prize, and by solving both correctly you come in on the \$100 prize to the winners.

Other Prizes

To any contestant sending a correct answer to one of these puzzles, we will send their choice of a year's subscription to "The Gentlewoman," or "American Fruit and Vegetable Journal," or "American Poultry Advocate," or your choice of any one of the following books: "The New Hygiene," a book on up-to-date treatment to maintain health without medicine; the works in one volume of Charlotte M. Braeme; or the "Duchess"; or Miss Muloch's; or Sylvanus Cobb, Jr., or Miss Braddon's; or Wilkie Collins; or Mary Cecil Hay. When sending in your answers name the prize you wish, should only one puzzle be answered correctly. The first puzzle is

This puzzle consists of a line of 13 incomplete letters, which if complete would spell three words. Only the lower two-fifths of each letter appears, the other three-fifths have been cut off. What are these three words? They are all taken from this very advertisement. The words are not separated from each other, but the letters follow in correct order, all they need being the space. There is no transposition or trick of any kind. Taking one letter right after the other from the first to the thirteenth they spell three words. **EACH WORD IN BOTH PUZZLES APPEARS SOMEWHERE IN THIS ADVERTISEMENT.** There is no chance about it. If there were two correct answers to either one of these puzzles, the Farm, Field and Fireside would be refused the mail for running a lottery.

THE FARM, FIELD AND FIRESIDE

In order to get all the words in this advertisement as promised, we are compelled to tell the following little story: "Some animal was injuring our trees on the hill, so we placed a poisoned paste in a tart, which the animal ate, and I hate to say what the pest proved to be. Can you guess? We found that the poison had made it very ill, and we took it by the tail and drowned it in the pond."

The object of the puzzle is in part to secure a large number of new trial subscribers to the Farm, Field and Fireside, the greatest agricultural weekly in the west. Do you know of any farmer who might be interested in a good farm paper? We want him on our list for a short time, and as the contest is inaugurated for the purpose of introducing our paper into new homes we make the following

Conditions:

To be eligible to receive a prize every contestant must send with his or her answer the name of a person not now a subscriber, with 25 cents to pay us for sending the paper to him on trial for three months. Remember, if you get one line right you earn a prize, and if both are right you are in on the first prize. **THIS CONTEST WILL CLOSE MARCH 31.** Address PUZZLE DEPARTMENT FARM, FIELD AND FIRESIDE, 710 MARION TEMPLE, CHICAGO.

rests, as they rise to go to the tree they begin to circle and rise higher and higher, and as they ascend the circle enlarges, and if one is very observing he will notice that each time the circle is made there will be a pull or a bend in a certain direction. Experience and observation has taught me that is the direction in which you may expect to look for the tree, and will find, when they settle down to business, that will be the way or direction they will go.

It is difficult, sometimes, to get bees to come back to the bait, if there is an abundance of bloom. My opinion is you cannot rely on a bee's steadiness in going and coming in the midst of flower-bloom. There is a fickleness about their movements that indicate this on their return to bait. I have seen them come direct from the bloom to the bait, and vice versa. I never had any trouble about bees coming back to the baits after going beyond them; they are generally a little slower about getting to work.

Clark Co., Wis.

L. ALLEN.

Wintering Very Well.

Bees are wintering very well here. My 80 colonies in the cellar are wintering better than I ever knew them to do before—no dead bees to amount to much. They have good honey.

FRANK BAKER.

Macon Co., Ill., Feb. 16.

Expects a Fine Year for Bees.

We are having fine weather here now. The bees have been flying for a week or more, rearing some brood and bringing in loads of pollen. I think we are sure to have a fine year in this locality.

H. HEWITT.

San Joaquin Co., Calif., Feb. 3.

Cold Hard on Clover.

Bees are wintering well so far; but the continued cold, hard, freezing weather, with no snow to protect the clover-roots, is anything but cheering to the man who looks to his bees for his principal means of support. Let us be hopeful.

J. W. WILCOX.

Jo Daviess Co., Ill., Feb. 16.

Sweet Clover—Candied Honey, Etc.

We have been sowing sweet clover here on the farm in a small way for several years, and a year ago last summer we cut about a half acre of the same mix with red clover, and put in the bottom of the mow where most of it had been until this winter, when we finished feeding it out. The horse did not seem to like it very well, but to know just what cattle would do with it!

MONEY IN MELONS

BUCKBEE'S

NEW STRAWBERRY MELON

which created such favorable comment last season was hybridized with the strawberry, the result being the most delicious strawberry flavor. Hardy, good market size, excellent shipper. It will please everybody that grows it and all who eat it.

WRITE TO-DAY FREE MENTION THIS PAPER.

and we will send you a liberal package of this wonderful melon seed and our large beautifully illustrated Seed and Plant Book. Tells all about best varieties of melons, how to grow for profit, etc. Write today and mention this paper.

H.W. BUCKBEE
ROCKFORD SEED FARMS,
ROCKFORD, ILL. BOX 585.

Please mention Bee Journal when writing.

HENS LAY

double the eggs when fed on Green Cut Bone. **MANN'S NEW BONE CUTTERS** prepare bone in the best and cheapest way. Cut fast, fine, turn easy. Mann's Cutters, newest, fastest, \$8. & \$10. Mann's Swinging Tray and Granite Crystal Grind make the business profitable. Catalog free. **F. W. MANN CO.,** Box 77, Milwaukee, Wis.

Please mention Bee Journal when writing.

SUFFERERS FROM LUNG OR KIDNEY

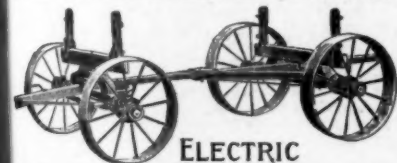
troubles can obtain valuable advice, FREE, by addressing
DR. PEIRO,
34 Central Music Hall, CHICAGO.

Write at once, stating age, sex, occupation, how troubled, post-office address, and enclose return stamp for immediate reply.

4 TOOLS IN 1
MUST DESIRABLE IMPLEMENT MADE...
Have you seen our popular New **UNIVERSAL MODEL** Combination Drill Double or Single Wheel with Hoe, Cultivator, Plow and Rake Attachments. It plants any seed with absolute regularity as to quantity and depth. No seed wanted at ends of rows. Easily changed from drill to cultivator. Made of the best material; will last a life-time. Our full line of tools for the gardener are the standard of America. Send for our free book. Popular prices to early purchasers. **AMES PLOW CO.,** Boston and New York.
Please mention Bee Journal when writing.

BEE-SUPPLIES!
Root's Goods at Root's Prices! POUDER'S HONEY-JARS and everything used by bee-keepers. Prompt Service—low freight rate. Catalog free. **WALTER S. POWDER,** 512 Mass. Ave., INDIANAPOLIS, IND.

BUY THE BEST.
If you want the best low-down wagon you should buy the Electric Handy Wagon. It is the best because it is made of the best material; the best broad-tired Electric Wheels; best seasoned white hickory axles; all other wood parts of the best seasoned white oak. The front and



ELECTRIC
rear bounds are made from the best angle steel, which is neater, stronger and in every way better than wood. Well painted in red and varnished. Extra length of reach and extra long standards supplied without additional cost when requested. This wagon is guaranteed to carry 4,000 pounds anywhere. Write the Electric Wheel Co., Box 16, Quincy, Ill., for their new catalog, which fully describes this wagon, their famous Electric Wheels, and Electric Feed Cookers. Please mention the Bee Journal.

\$4,000 IN VALUE FOR 15c.
"How to Make Money with Poultry and Incubators." is a new 192 page (8 x 11 inches) book, filled with articles by the highest authorities in the world, written expressly for this manual. Its preparation cost us \$4,000. Send 15c. in stamps and specify book No. 16. It tells all about the famous **CYPHERS INCUBATOR**. REGulating. SELF-VENTILATING. SELF-SUPPLYING. MOISTURE. SELF-REGULATING. A machine warranted to last ten years without repairs, and to out-last, during three trials, any other machine made, bar none. Built for Business. Sold on Honor. Your money back if it does not do all we claim. One style only—Our Best. 16-page circular free. Book 15 cents. Address nearest office, **CYPHERS INCUBATOR CO.,** CHICAGO, ILL. WATLAND, N. Y. BOSTON, MASS.
Please mention Bee Journal when writing.

took some sweet clover hay out in cow yard, where there were three head, and threw the hay down to the cattle. Two head ate the hay just the same as if it had been red clover, while one cow I had bought in October would not even taste it or try to eat it. Sweet clover mown down and fed to cattle when about two feet tall, grown on good soil, was eaten readily last summer here at our place.

Now a pointer to anyone short of pasture: Teach cattle to eat sweet clover, then go on the highway or elsewhere and cut a lot of it, load on the wagon, and drive into a pasture field and scatter it rather thinly over the ground, and let the cattle help themselves.

Two or three years ago we began putting up our honey in raised-cover tin pails, and let most of it candy, then put it on the market to be mostly sold on commission, and what was sold for cash was sold with the understanding that if the groceryman could not dispose of it for a fair profit I was to take it out of the store and return the cash, which I did.

But since Dadant's sell all their honey when granulated, I was determined our ripe, rich honey should go the same way, and the consequence is we now have a good trade built up on honey in the granulated form. Outside of what we put up in one-pound bottles, it is not liquefied to satisfy any one's whims.

Last fall we put up 600 pounds of honey in common quart fruit-cans, with a large, suitable label, which for cheapness are just the thing, for they sell well.

Fourteen years ago in the spring we began bee-keeping in a small way (according to the books), and to this date we have taken off 16,303 pounds of honey, about 3/4 being extracted, and find, by keeping a careful record, we have taken off an average of 27 pounds per colony for the 14 years. We have a poor locality for bees, haven't we? **C. A. BUNCH.**

Marshall Co., Ind.

Bees Wintering Well.

My 125 colonies of bees in the cellar are keeping the best I ever had them. There is not a gallon of dead bees on the floor.

A. L. KILDOW.

Bureau Co., Ill., Feb. 19.

Report for the Season of 1899.

Last summer was a hard one for me. I had a hard spell of sickness so the bees had things a good deal their own way. They come out of winter quarters in good condition, losing 5 out of 111; I sold 26 and doubled down to 73. There was great loss of bees here, a number of bee-keepers losing all. One man 3 miles from my place lost all he had—100 colonies. Mine did fairly well last season, as I got 2,000 pounds of comb honey and 500 pounds of extracted. The fall flow of honey was the best we have had for years. I increased from 73 to 125 colonies, sold some, and doubled down to 93, all in good condition, with plenty of stores for winter. **JOHN TURNBULL.**

Houston Co., Minn., Feb. 15.

Extractors, Large and Small.

EDITOR YORK:—On page 114 is a picture of D. H. Coggeshall's apiary with that extractor looking very familiar, for I think I had a hand in making that machine. On the same page "Old Grimes" gives some points on extractors as positive facts, which do not accord with my philosophy or experience. Isn't it the centrifugal force that throws out the honey? And isn't that force proportioned according to the square of the diameter? A comb 4 inches from the center spindle will feel only one-fourth as much centrifugal energy as a comb 8 inches from the center spindle.

I admit it is easier to make one revolution with a two-frame toy machine, but deny that it is easier to make 6 revolutions with it to do the same work that Morton's favorite 8-frame extractor would do in



Extra Early Admiral Dewey
Originated and introduced by
HARRY N. HAMMOND,
Seedsman, Box 2, FIFIELD, MICH.
Largest grower of Seed Potatoes in America. The Dewey is the most wonderful New Potato. Its merits are fully described in Hammond's 1900 Catalogue. Free for the asking. Address as above. Write to-day. 30 other varieties of potatoes. Also Vegetable and Flower Seeds.

Please mention Bee Journal when writing.

Apiary SUPPLIES
Bee-Hives, (5 styles); also Sections, Veils, Smokers, Honey-Knives, Hive-Tools, Alsike and Sweet Clover Seed, Books on Bee-Culture, Etc. Address,
F. A. SNELL, Milledgeville, Carroll Co. Ill.
4A12t Please mention the Bee Journal.

None Better
Everything necessary to make a good incubator is put into the new **NONE BETTER INCUBATOR.** The simplest incubator made. The most honestly constructed. Perfectly. Built to last. Lowest priced good machine on the market. Send for catalogue. **Hawkeye Incubator Co., Box A, Newton, Ia.** Please mention Bee Journal when writing.



SEED DUE BILL FREE

To get new customers to test my Seeds, I will mail my 1900 Catalogue, filled with more bargains than ever and a 10c Due Bill good for 10c worth of Seeds for trial absolutely free. All the Best Seeds, Bulbs, Plants, Roses, Farm Seeds, Potatoes, etc., at lowest prices. Nine Great Novelties offered without names. I will pay \$50. FOR A NAME for each. Many other novelties offered, including this one, the great money making plant. Over 50 varieties shown in colors. \$1100 in cash premiums offered. Don't give your order until you see this new catalogue. You'll be surprised at my bargain offers. Send your name on a postal for catalogue today. It is FREE to all. Tell your friends to send too. **F. B. MILLS, Box 88 Roschill, Osnaburg Co., N. Y.**
1D7t Please mention the Bee Journal.

The Midland Farmer

(SEMI-MONTHLY).

The representative modern Farm Paper of the Central and Southern Mississippi Valley. Page departments to every branch of Farming and Stock-Raising. Plain and Practical—Seasonable and Sensible. Send 25 cents, silver or two-cent stamps, and a list of your neighbors (for free samples), and we will enter your name for 1 year. (If you have not received your money's worth at end of year, we will, upon request, continue the paper to you free of cost another year).

W. M. BARNUM, Publisher,
Wainwright Building, ST. LOUIS, MO.
7Dtf Please mention the Bee Journal.

SURE HATCH INCUBATOR.

True to its name. It is made to hatch and do hatch. No excess heating in center of egg-chamber. Entirely automatic. Hundreds in use. Common Sense Brooders are perfect. Let us make you prices laid down at your station. Our Catalogue is check full of practical Poultry information. It is FREE. Send for it now. **SURE HATCH INCUBATOR COMPANY, Clay Center, Nebr.**
45D13t Please mention the Bee Journal.

FREE Our handsome Garden Annual and Seed Catalogue, or for a 3c stamp, Catalogue and a packet of the **IMPERIAL GERMAN PANSY.** If you will send us the names of 6 neighbors who buy seed by mail, we will send the Pansy Seed FREE for your trouble. Address,
GOLE'S SEED STORE, PELLA, IA.
7D4t Please mention the Bee Journal.

much less time. With large machines it is the inertia to be overcome in starting and stopping that takes muscle. Starting is usually done by a push on the basket-reel with the left hand, anyway, and the brake does the stopping with ease; and I have found it necessary to slow down when using the big extractor, to avoid injury to combs after getting used to rapid turning with a smaller one.

"It isn't the distance travelled, but 'tis the pace that kills"—holds true in extractors.

Tompkins Co., N. Y.

S. A. NIVER.

Extracting-House on Wheels.

Can any reader of the American Bee Journal furnish information as to how best to build an extracting-house on wheels, so it can be easily transported and operated from place to place, very near to the hives, with two horses? If so, let him kindly arise and explain. I want to build one.

La Salle Co., Ill.

A. MOTTAZ.

Building Up Weak Colonies.

Many colonies of bees are lost during April and May that might have been profitable to their owners if judicious care had been given them. During my first years of bee-keeping I used to let them go it alone, live or die, and they generally came out the latter way.

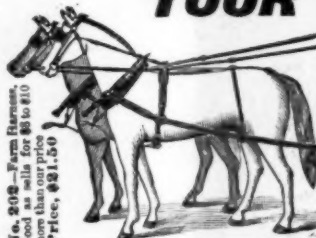
My practice with weak colonies during my last years of bee-keeping was to give them young bees from strong colonies as soon as they were hatched. The bees should be shaken into a dish in order to return the queen if she should happen to be shaken off with the bees. When running them into the colony use a little smoke.

A few bees from five or six strong colonies will build up a weak one and enable them to care for a frame of brood. If there are not enough strong colonies to spare the necessary amount of bees at one time, wait a few days and repeat the operation before giving them brood.

Tioga Co., N. Y.

J. H. ANDRE.

YOUR MONEY'S WORTH.



No. 508—Farm Harness. Good as sells for \$8 to \$10 more than our price. Price, \$21.50

You have a right to expect that, because you are entitled to it. To meet this condition is our aim and has been so for all the 27 years we have been in this business. To do this we sell all goods direct from our factory to the consumer at wholesale prices. The advantages of this plan are many and obvious. This plan has built us up until we are now the largest manufacturers in the world selling vehicles and harness to consumer exclusively. We make 178 styles of vehicles and 65 styles of harness. The buyer takes no risk on our plan as we ship our goods anywhere for examination and guarantee safe arrival. Send at once for a copy of our large illustrated catalogue—FREE.



No. 516—Canopy Top, Ten spring Carriage with side curtains, storm apron, sun shade, lamp, feeders, pole or shafts, \$65. Same as sells for \$85 to \$90 more.

Elkhart Carriage & Harness Manfg. Co., Elkhart, Indiana.

Please mention Bee Journal when writing.

Have You Either an Orchard or Garden?

Have you anything to do with either Fruits or Vegetables? Then keep in touch with your work by subscribing for the

American Fruit and Vegetable Journal

Published at
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Sample copy free. Mention this paper.

All departments of the Fruit and Vegetable business discuss by practical and experienced parties.

FREE!

We will send the above journal absolutely FREE for one year to all new subscribers to this paper, and to all old subscribers sending us \$1.00 to pay their subscription one year in advance. Both papers for the price of one. Send your subscription to this office while this offer is open. Both papers \$1.00.

AMERICAN BEE JOURNAL, 118 Mich. St., Chicago, Ill.

The Novelty Pocket-Knife.

Your Name and Address on one side—Three Bees on the other side.



[THIS CUT IS THE FULL SIZE OF THE KNIFE.]

Your Name on the Knife.—When ordering, be sure to say just what name and address you wish put on the Knife.

The Novelty Knife is indeed a novelty. The novelty lies in the handle. It is made beautifully of indestructible celluloid, which is as transparent as glass. Underneath the celluloid, on one side of the handle is placed the name and residence of the subscriber, and on the other side pictures of a Queen, Drone, and Worker, as shown here.

The Material entering into this celebrated knife is of the very best quality; the blades are hand-forged out of the very finest English razor-steel, and we warrant every blade. The bolsters are made of German silver, and will never rust or corrode. The rivets are hardened German silver wire; the linings are plate brass; the back springs of Sheffield spring-steel, and the finish of the handle as described above. It will last a last-time, with proper usage.

Why Own the Novelty Knife? In case a good knife is lost, the chances are the owner will never recover it; but if the "Novelty" is lost, having name and address of owner, the finder will return it; otherwise to try to destroy the name and address, would destroy the knife. If traveling, and you meet with a serious accident, and are so fortunate as to have one of the "Novelties," your POCKET-KNIFE will serve as an identifier; and in case of death, your relatives will at once be notified of the accident.

How appropriate this knife is for a present! What more lasting memento could a mother give to a son, a wife to a husband, a sister to a brother, or a lady to a gentleman, the knife having the name of the recipient on one side?

The accompanying cut gives a faint idea, but cannot fully convey an exact representation of this beautiful knife, as the "Novelty" must be seen to be appreciated.

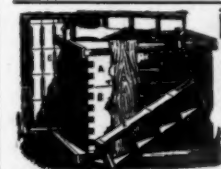
How to Get this Valuable Knife.—We send it postpaid for \$1.10, or give it as a Premium to the one sending us THREE NEW SUBSCRIBERS to the Bee Journal (with \$3.00.) We will club the Novelty Knife and the Bee Journal for one year, both for \$1.90.

GEORGE W. YORK & CO., 118 Mich. St., Chicago, Ill.

Please allow about two weeks for your knife order to be filled.

Convention Notices.

Utah.—The Utah State Bee-Keepers' Association will hold its semi-annual convention in the City and County Building, Salt Lake City, Apr. 6, 1900, at 10 o'clock a.m. A full program in the interest of the industry will be presented, and all our bee-keepers can help themselves by aiding the Association, and in order to create a closer bond of union among our bee-keepers. As a further incentive to the success of the bee-keeping industry, it is very desirable to have our bee-keepers from all parts attend the spring convention. J. B. FAGO, Sec.



HONEY MONEY

Remits from the best care of the bees. That results from the use of the best Apian appliances. THE DOVE-TAILED HIVE shown here is one of special merit. Equipped with Super Brood chamber, section holder, scalloped wood separator and flat cover. We maintain in stock a full line of bee supplies. Can supply every want. Illustrated catalogue FREE. INTERSTATE MANFG. CO., Box 10, HUDSON, WIS.

THE MODERN FARMER & BUSY BEE

EMERSON TAYLOR ABBOTT, Editor.

A live, up-to-date Farm Journal with a General Farm Department, Dairy, Horticulture, Livestock, Poultry, Bees, Veterinary, Home and General News. Edited by one who has had practical experience in every department of farm work. To introduce the paper to new readers, it will be sent for a short time to New Subscribers, one year for 25 cents. Sample copies free. Best Advertising Medium in the Central West. Address,

MODERN FARMER,
ST. JOSEPH, MO.

SUPPLIES FROM LEWIS.

Thousands of Bee-Hives. Millions of Sections ready for prompt shipment.
We manufacture Five different styles of hives,
The Dovetailed, Wisconsin, Improved Lang. Simp., Grim-Langstroth and Champion Chaff.
All are Leaders and UP-TO-DATE in every respect.
Excellent material and finest workmanship.

LEWIS WHITE POLISHT SECTIONS

Are acknowledged by all to be perfect and strictly highest grade.
Not only do we manufacture the finest Bee-Keepers' Supplies, but our Packing-Case insures their arrival at your railroad station in perfect condition.

G. B. LEWIS CO., Watertown, Wis., U. S. A.
SEND FOR CATALOG.

BRANCHES:

G. B. LEWIS CO., 19 So. Alabama St., Indianapolis, Ind.
G. B. LEWIS CO., 515 First Ave., N. E., Minneapolis, Minn.

AGENCIES:

L. C. WOODMAN.....Grand Rapids, Mich.
FRED FOULGER & SONS.....Ogden, Utah.
E. T. ABBOTT, St. Joseph, Missouri.
Special Southwestern Agent.

EVERGREENS

Hardy Sorts, Nursery Grown. Millions to offer. 6 to 8 in. \$1; 12 in. \$2; 2 to 3 ft. \$10 per 100 prepaid; 4 to 6 ft. \$20 per 100. GREAT BARGAINS to select from. Forest and Fruit Trees, Vines, etc. Send for free catalogue. LOCAL AGENTS WANTED.



D. HILL, Evergreen Dundee, Ill.
SA6t Please mention the Bee J

DITTMER'S FOUNDATION

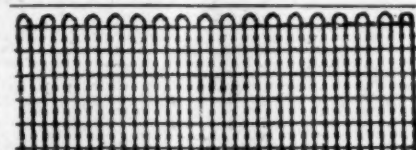
Wholesale and Retail

This foundation is made by an absolutely non-dipping process, thereby producing a perfectly clear and pliable foundation that retains the odor and color of beeswax, and is free from dirt.

Working wax into foundation for cash, a specialty. Write for samples and prices.

A full line of Supplies at the very lowest prices, and in any quantity. Best quality and prompt shipment. Send for large, illustrated catalogue.

GUS. DITTMER, Augusta, Wis.
Beeswax Wanted.



STEEL PICKET LAWN FENCE,

Field and Hog Fence with or without bottom cable barbed. M. M. S. Poultry Fencing. Lawn and Farm Steel Gates and Posts.

UNION FENCE CO., DeKalb, Ill.
3A13t Please mention the Bee Journal.

THE WAR IN SOUTH AFRICA

has demonstrated the great foresight of the Boers, in availing themselves of all the opportunities in times of peace to prepare for war. Similar foresight should lead you to improve the opportunity of securing better farms than theirs in this country. They are on line of the Chicago, Milwaukee & St. Paul railway in Marinette county, Wisconsin, where the crops are of the best, work plenty, fine markets, excellent climate, pure, soft water; land sold cheap and on long time. Why rent a farm when you can buy one for less than you pay for rent? Address C. E. ROLLINS, Land Agent, 161 La Salle St., Chicago, Ill.

SUBSCRIBE FOR THE—

Farmer's Home Journal, Louisville, Ky.

A practical business paper for the farmer. It treats of farming and stock breeding from both practical and scientific standpoints. It is the oldest and best known agricultural weekly in the South. If you have anything to sell send us your advertisement. Every farmer who expects to mix "brains with muscle" in his business should read this paper. Subscription price, \$1.00 per year. Sample copy free. Address, **FARMER'S HOME JOURNAL, Louisville, Ky.**

DOES THE WORK BETTER THAN HENS.

OUR INCUBATORS

are scientifically perfect, a 200 size hatching more chicks than 30 hens and at a time when sitters are hard to get. As money makers, no apparatus will equal a Successful Hatcher.

We are the largest exclusive manufacturers of standard incubators and brooders. Send 6 cents for our 150-page Catalogue, printed in 5 languages. Address, **DES MOINES INCUBATOR CO., Box 78, DES MOINES, IOWA.**



Please mention Bee Journal when writing.

HONEY AND BEESWAX

MARKET QUOTATIONS.

CHICAGO, Feb. 19.—A little trade in honey in a peddling way by the case, no demand for lots, neither has there been for the past 3 months. Comb honey of the choice grade is selling at steady prices, and there is not too much of it; off grades are slow. Extracted is steady with no change in prices. Beeswax sells at 28 cents if yellow and clean. **R. A. BURNETT & Co.**

CINCINNATI, Dec. 27.—There is a good demand for all kinds of extracted honey. White clover and basswood sell at 8@8½c; amber and Southern, 6@7c, according to quality and package. Fancy comb honey in no-drip shipping-cases sells at 15@16c; darker grades hard to sell at any price. Beeswax, 26c. **C. H. W. WEBER, Successor to Chas. F. Muth & Son and A. Muth**

LOS ANGELES, Feb. 15.—1-pound frames, 12½@15c; 2-pound cans, 2 dozen in case, per dozen, \$2.50; 2-pound glass pails, per dozen, \$2.50. Extracted, water white, 60-pound tins, per pound, 8½c; light amber, 7½@8c; dark amber, 7½c. Beeswax, 25@26c.

Stocks of honey in all parts of the United States are lower than they have been for 10 years. It is most desirable that rain should come as prices are likely to be high.

KANSAS CITY, Feb. 12.—We quote fancy white comb, 14@15c; No. 1, 13½@14c; No. 2, 12½@13c; fancy amber, 13@14c; No. 1, 12½@13c; No. 2, 12@12½c. Extracted, white, 7½@8c; amber, 7@7½c; dark, 6@6½c. Beeswax, 22@25c.

C. C. CLEMONS & Co.

BUFFALO, Jan. 5.—Market bare of fancy white one-pound comb honey, and selling at 15@16c; fair to good, 12@14c; buckwheat, dark, poor, etc., 8@10c. Fancy pure beeswax, 28@30c.

BATTERSON & Co.

NEW YORK, Feb. 8.—During the past 30 days our market has been somewhat slow and easy in both comb and extracted honey. Stocks of comb honey, however, are almost exhausted, and there is a fair demand for all grades. Fancy white selling at 15c; No. 1 white at 13@14c; fancy amber, 11@12c, and buckwheat at 9@11c, according to quality, etc.

Our market is well supplied with extracted, the prices are firm and unchanged. Beeswax sells very well at from 26@28c, according to quality.

HILDRETH & SEGLEKEN.

SAN FRANCISCO, Feb. 14.—White comb, 11½@12½c; amber, 8@10c. Extracted, white, 7½@8c; light amber, 7@7½c; amber, 5@5½c; Beeswax, 26@27c.

Beyond the filling of small orders by jobbers, there is practically nothing doing in honey. Offerings are light, and are mainly comb. Quotations are unchanged, but at present represent little more than jobbing rates. A shipment of beeswax was made the past week of 3,200 pounds by steamer to Germany. Stocks are small and prices steady.

BOSTON, Jan. 12.—We quote as follows: Fancy white, 16c; A No. 1, 15c; No. 1, 13@14c; buckwheat will not sell in this city. Extracted, light amber, @8c. Demand is very light.

BLAKE, SCOTT & LEE.

ALBANY, Jan. 10.—We quote: Fancy white comb, 15c; No. 1 white, 13@14c; mixt, 11@13c; buckwheat, 10@11c. Extracted, white, 8@9c; mixt, 6½@7c; dark, 6. Beeswax, 26@28c.

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OMAHA, Feb. 13.—Demand shows some improvement in January, having been much more active, but as anticipated there is no advance in prices. Market remains steady at 14@14½c for fancy white comb and 8½c for white extracted. The latter is pretty well cleaned up along the Missouri River, and it looks as if there would be some shortage before another crop comes in. From present appearances there is about enough comb honey to go around at the present prices, hence we look for no particular change in values.

PEYCKE BROS.

DETROIT, Feb. 10.—Fancy white comb, 15@16c; No. 1, white, 13@14c; fancy amber, 11@12c; dark and undesirable lots, 8@10c. Extracted, white, 7@7½c; amber and dark, 5@5½c. Beeswax, 25@26c. Supply of honey fair with light demand.

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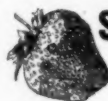
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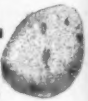
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